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<u>L6</u>	L2 and replica\$	67	<u>L6</u>
<u>L5</u>	L2 and (sync\$ adj2 condition\$)	0	<u>L5</u>
<u>L4</u>	L2 and (sync\$ same condition\$)	45	<u>L4</u>
<u>L3</u>	L2 and sync\$	97	<u>L3</u>
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END OF SEARCH HISTORY

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Search Results - Record(s) 1 through 3 of 3 returned.☐ 1. Document ID: US 20020083187 A1

L8: Entry 1 of 3

File: PGPB

Jun 27, 2002

PGPUB-DOCUMENT-NUMBER: 20020083187

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020083187 A1

TITLE: Method and apparatus for minimizing network congestion during large payload delivery

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	-----	-----------	-------

☐ 2. Document ID: US 20020083118 A1

L8: Entry 2 of 3

File: PGPB

Jun 27, 2002

PGPUB-DOCUMENT-NUMBER: 20020083118

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020083118 A1

TITLE: Method and apparatus for managing a plurality of servers in a content delivery network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	-----	-----------	-------

☐ 3. Document ID: US 20020078174 A1

L8: Entry 3 of 3

File: PGPB

Jun 20, 2002

PGPUB-DOCUMENT-NUMBER: 20020078174

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020078174 A1

TITLE: Method and apparatus for automatically adapting a node in a network

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC	Draw Desc	Image
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	-----	-----------	-------

Generate Collection

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Terms

L7 and (modificat\$ same request\$3)

Documents

3

Display Format:

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WEST

Your wildcard search against 2000 terms has yielded the results below

Search for additional matches among the next 2000 terms

Generate Collection

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Search Results - Record(s) 1 through 10 of 24 returned.

☐ 1. Document ID: US 20020083187 A1

L7: Entry 1 of 24

File: PGPB

Jun 27, 2002

PGPUB-DOCUMENT-NUMBER: 20020083187

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020083187 A1

TITLE: Method and apparatus for minimizing network congestion during large payload delivery

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KWD Draw Desc Image

☐ 2. Document ID: US 20020083118 A1

L7: Entry 2 of 24

File: PGPB

Jun 27, 2002

PGPUB-DOCUMENT-NUMBER: 20020083118

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020083118 A1

TITLE: Method and apparatus for managing a plurality of servers in a content delivery network

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KWD Draw Desc Image

☐ 3. Document ID: US 20020078174 A1

L7: Entry 3 of 24

File: PGPB

Jun 20, 2002

PGPUB-DOCUMENT-NUMBER: 20020078174

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020078174 A1

TITLE: Method and apparatus for automatically adapting a node in a network

Full Title Citation Front Review Classification Date Reference Sequences Attachments

KWD Draw Desc Image

☐ 4. Document ID: US 6233702 B1

L7: Entry 4 of 24

File: USPT

May 15, 2001

US-PAT-NO: 6233702

DOCUMENT-IDENTIFIER: US 6233702 B1

TITLE: Self-checked, lock step processor pairs

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMIC	Draw Desc	Image
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☐ 5. Document ID: US 6157967 A

L7: Entry 5 of 24

File: USPT

Dec 5, 2000

US-PAT-NO: 6157967

DOCUMENT-IDENTIFIER: US 6157967 A

TITLE: Method of data communication flow control in a data processing system using busy/ready commands

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMIC	Draw Desc	Image
------	-----------	-------

☐ 6. Document ID: US 6151689 A

L7: Entry 6 of 24

File: USPT

Nov 21, 2000

US-PAT-NO: 6151689

DOCUMENT-IDENTIFIER: US 6151689 A

TITLE: Detecting and isolating errors occurring in data communication in a multiple processor system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMIC	Draw Desc	Image
------	-----------	-------

☐ 7. Document ID: US 6014669 A

L7: Entry 7 of 24

File: USPT

Jan 11, 2000

US-PAT-NO: 6014669

DOCUMENT-IDENTIFIER: US 6014669 A

TITLE: Highly-available distributed cluster configuration database

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMIC	Draw Desc	Image
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☐ 8. Document ID: US 5964835 A

L7: Entry 8 of 24

File: USPT

Oct 12, 1999

US-PAT-NO: 5964835

DOCUMENT-IDENTIFIER: US 5964835 A

TITLE: Storage access validation to data messages using partial storage address data indexed entries containing permissible address range validation for message source

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KMIC	Draw Desc	Image
------	-----------	-------

☐ 9. Document ID: US 5914953 A

L7: Entry 9 of 24

File: USPT

Jun 22, 1999

US-PAT-NO: 5914953

DOCUMENT-IDENTIFIER: US 5914953 A

TITLE: Network message routing using routing table information and supplemental enable information for deadlock prevention

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

WORD	Draw Desc	Image
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☐ 10. Document ID: US 5867501 A

L7: Entry 10 of 24

File: USPT

Feb 2, 1999

US-PAT-NO: 5867501

DOCUMENT-IDENTIFIER: US 5867501 A

TITLE: Encoding for communicating data and commands

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

WORD	Draw Desc	Image
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Your wildcard search against 2000 terms has yielded the results below

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Search Results - Record(s) 11 through 20 of 24 returned.

☐ 11. Document ID: US 5838894 A

L7: Entry 11 of 24

File: USPT

Nov 17, 1998

US-PAT-NO: 5838894

DOCUMENT-IDENTIFIER: US 5838894 A

TITLE: Logical, fail-functional, dual central processor units formed from three processor units

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
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☐ 12. Document ID: US 5790776 A

L7: Entry 12 of 24

File: USPT

Aug 4, 1998

US-PAT-NO: 5790776

DOCUMENT-IDENTIFIER: US 5790776 A

TITLE: Apparatus for detecting divergence between a pair of duplexed, synchronized processor elements

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
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☐ 13. Document ID: US 5751955 A

L7: Entry 13 of 24

File: USPT

May 12, 1998

US-PAT-NO: 5751955

DOCUMENT-IDENTIFIER: US 5751955 A

TITLE: Method of synchronizing a pair of central processor units for duplex, lock-step operation by copying data into a corresponding locations of another memory

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWIC	Draw Desc	Image
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☐ 14. Document ID: US 5751932 A

L7: Entry 14 of 24

File: USPT

May 12, 1998

US-PAT-NO: 5751932

DOCUMENT-IDENTIFIER: US 5751932 A

TITLE: Fail-fast, fail-functional, fault-tolerant multiprocessor system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RWMC	Draw Desc	Image
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☐ 15. Document ID: US 5689689 A

L7: Entry 15 of 24

File: USPT

Nov 18, 1997

US-PAT-NO: 5689689

DOCUMENT-IDENTIFIER: US 5689689 A

TITLE: Clock circuits for synchronized processor systems having clock generator circuit with a voltage control oscillator producing a clock signal synchronous with a master clock signal

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

RWMC	Draw Desc	Image
------	-----------	-------

☐ 16. Document ID: US 5675807 A

L7: Entry 16 of 24

File: USPT

Oct 7, 1997

US-PAT-NO: 5675807

DOCUMENT-IDENTIFIER: US 5675807 A

TITLE: Interrupt message delivery identified by storage location of received interrupt data

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWMC	Draw Desc	Image
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☐ 17. Document ID: US 5675579 A

L7: Entry 17 of 24

File: USPT

Oct 7, 1997

US-PAT-NO: 5675579

DOCUMENT-IDENTIFIER: US 5675579 A

TITLE: Method for verifying responses to messages using a barrier message

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWMC	Draw Desc	Image
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☐ 18. Document ID: US 5574849 A

L7: Entry 18 of 24

File: USPT

Nov 12, 1996

US-PAT-NO: 5574849

DOCUMENT-IDENTIFIER: US 5574849 A

TITLE: Synchronized data transmission between elements of a processing system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWMC	Draw Desc	Image
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☐ 19. Document ID: US 4980857 A

L7: Entry 19 of 24

File: USPT

Dec 25, 1990

US-PAT-NO: 4980857

DOCUMENT-IDENTIFIER: US 4980857 A

TITLE: Operations controller for a fault tolerant multiple node processing system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC	Draw Desc	Image
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☐ 20. Document ID: US 4972415 A

L7: Entry 20 of 24

File: USPT

Nov 20, 1990

US-PAT-NO: 4972415

DOCUMENT-IDENTIFIER: US 4972415 A

TITLE: Voter subsystem for a fault tolerant multiple node processing system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC	Draw Desc	Image
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☐ 21. Document ID: US 4933940 A

L7: Entry 21 of 24

File: USPT

Jun 12, 1990

US-PAT-NO: 4933940

DOCUMENT-IDENTIFIER: US 4933940 A

TITLE: Operations controller for a fault tolerant multiple node processing system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWC	Draw Desc	Image
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☐ 22. Document ID: US 4914657 A

L7: Entry 22 of 24

File: USPT

Apr 3, 1990

US-PAT-NO: 4914657

DOCUMENT-IDENTIFIER: US 4914657 A

TITLE: Operations controller for a fault tolerant multiple node processing system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWC	Draw Desc	Image
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☐ 23. Document ID: US 4816989 A

L7: Entry 23 of 24

File: USPT

Mar 28, 1989

US-PAT-NO: 4816989

DOCUMENT-IDENTIFIER: US 4816989 A

TITLE: Synchronizer for a fault tolerant multiple node processing system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWC	Draw Desc	Image
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☐ 24. Document ID: US 4805107 A

L7: Entry 24 of 24

File: USPT

Feb 14, 1989

US-PAT-NO: 4805107

DOCUMENT-IDENTIFIER: US 4805107 A

TITLE: Task scheduler for a fault tolerant multiple node processing system

Full	Title	Citation	Print	Review	Classification	Date	Reference	Sequences	Attachments
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MMIC	Draw Desc	Image
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side by side

Hit Count Set Name

result set

DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR

<u>L9</u>	L1 and replica\$	7	<u>L9</u>
<u>L8</u>	L7 and (modificat\$ same request\$3)	3	<u>L8</u>
<u>L7</u>	L6 and (sync\$ same condition\$)	24	<u>L7</u>
<u>L6</u>	L2 and replica\$	67	<u>L6</u>
<u>L5</u>	L2 and (sync\$ adj2 condition\$)	0	<u>L5</u>
<u>L4</u>	L2 and (sync\$ same condition\$)	45	<u>L4</u>
<u>L3</u>	L2 and sync\$	97	<u>L3</u>
<u>L2</u>	cluster\$ and vot\$ and (database\$2 or (data adj2 base\$)) and (updat\$3 or modify\$ or recent\$)	185	<u>L2</u>
<u>L1</u>	cluster\$ same vot\$ same (database\$2 or (data adj2 base\$)) same (updat\$3 or modify\$ or recent\$)	9	<u>L1</u>

END OF SEARCH HISTORY

WEST[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 7 of 7 returned.**☐ 1. Document ID: US 20010008019 A1

L9: Entry 1 of 7

File: PGPB

Jul 12, 2001

PGPUB-DOCUMENT-NUMBER: 20010008019

PGPUB-FILING-TYPE: new-utility

DOCUMENT-IDENTIFIER: US 20010008019 A1

TITLE: METHOD AND SYSTEM FOR TRANSPARENTLY FAILING OVER APPLICATION CONFIGURATION INFORMATION IN A SERVER CLUSTER

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWC	Draw Desc	Image
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☐ 2. Document ID: US 6360331 B2

L9: Entry 2 of 7

File: USPT

Mar 19, 2002

US-PAT-NO: 6360331

DOCUMENT-IDENTIFIER: US 6360331 B2

TITLE: Method and system for transparently failing over application configuration information in a server cluster

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------

KWC	Draw Desc	Image
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☐ 3. Document ID: US 6279032 B1

L9: Entry 3 of 7

File: USPT

Aug 21, 2001

US-PAT-NO: 6279032

DOCUMENT-IDENTIFIER: US 6279032 B1

TITLE: Method and system for quorum resource arbitration in a server cluster

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KWC	Draw Desc	Image
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☐ 4. Document ID: US 6243825 B1

L9: Entry 4 of 7

File: USPT

Jun 5, 2001

US-PAT-NO: 6243825

DOCUMENT-IDENTIFIER: US 6243825 B1

TITLE: Method and system for transparently failing over a computer name in a server cluster

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMW	Draw Desc	Image
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☐ 5. Document ID: US 6163855 A

L9: Entry 5 of 7

File: USPT

Dec 19, 2000

US-PAT-NO: 6163855

DOCUMENT-IDENTIFIER: US 6163855 A

TITLE: Method and system for replicated and consistent modifications in a server cluster

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMW	Draw Desc	Image
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☐ 6. Document ID: US 6014669 A

L9: Entry 6 of 7

File: USPT

Jan 11, 2000

US-PAT-NO: 6014669

DOCUMENT-IDENTIFIER: US 6014669 A

TITLE: Highly-available distributed cluster configuration database

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMW	Draw Desc	Image
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☐ 7. Document ID: NA890815

L9: Entry 7 of 7

File: TDBD

Aug 1, 1989

TDB-ACC-NO: NA890815

DISCLOSURE TITLE: Jury: Enhancing Fault Tolerance of Transaction Management

PUBLICATION-DATA:

IBM Technical Disclosure Bulletin, August 1989, US

VOLUME NUMBER: 32

ISSUE NUMBER: 3A

PAGE NUMBER: 15 - 18

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Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMW	Draw Desc	Image
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DETECT\$(DETECTION-INVESTIGATION).P29-P92,P94-P98,P24-P28,P21-P23,P1-P19,P20-P20.

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L14 and detect\$	8

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Search:

L15

Refine Search

Recall Text

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Search History

DATE: Sunday, July 07, 2002 [Printable Copy](#) [Create Case](#)

Set Name Query

side by side

Hit Count Set Name

result set

DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR

<u>L15</u>	L14 and detect\$	8	<u>L15</u>
<u>L14</u>	L11 and (updat\$3 adj2 request\$)	9	<u>L14</u>
<u>L13</u>	L11 and (request\$ same updat\$3)	17	<u>L13</u>
<u>L12</u>	L10 and (sync\$ adj2 condition\$)	0	<u>L12</u>
<u>L11</u>	L10 and (sync\$ same condition\$)	39	<u>L11</u>
<u>L10</u>	(L1 or L2) and broadcast\$	102	<u>L10</u>
<u>L9</u>	L1 and replica\$	7	<u>L9</u>
<u>L8</u>	L7 and (modificat\$ same request\$3)	3	<u>L8</u>
<u>L7</u>	L6 and (sync\$ same condition\$)	24	<u>L7</u>
<u>L6</u>	L2 and replica\$	67	<u>L6</u>
<u>L5</u>	L2 and (sync\$ adj2 condition\$)	0	<u>L5</u>
<u>L4</u>	L2 and (sync\$ same condition\$)	45	<u>L4</u>
<u>L3</u>	L2 and sync\$	97	<u>L3</u>
<u>L2</u>	cluster\$ and vot\$ and (database\$2 or (data adj2 base\$)) and (updat\$3 or modify\$ or recent\$)	185	<u>L2</u>
<u>L1</u>	cluster\$ same vot\$ same (database\$2 or (data adj2 base\$)) same (updat\$3 or modify\$ or recent\$)	9	<u>L1</u>

END OF SEARCH HISTORY

WEST**End of Result Set**☐ **Generate Collection** **Print**

L7: Entry 1 of 1

File: USPT

May 21, 2002

DOCUMENT-IDENTIFIER: US 6393485 B1

TITLE: Method and apparatus for managing clustered computer systems

Brief Summary Paragraph Right (6):

In addition to these three technological trends, there is a growing market for computer clusters. In essence, the market is asking for highly reliable computing. Another way of stating this is that the computer networks must have "high availability." For example, if the computer is used to host a web-site, its usage is not necessarily limited to normal business hours. In other words, the computer may be accessed around the clock, for every day of the year. There is no safe time to shut down to do repairs. Instead, a clustered computer system is useful because if one computer in the cluster shuts down, the others in the cluster automatically assume its responsibilities until it can be repaired. There is no down-time exhibited or detected by users.

Detailed Description Paragraph Right (19):

Microsoft Cluster Services Event Adapter (CSEA) 320 converts a cluster services notifications into events recognizable by the present cluster manager. There is one instance of CSEA running on each node. Each CSEA is used to monitor cluster resource groups and resources that are running on the local node only. When sub clusters in a multi-cluster are configured as single-node clusters, the heartbeat mechanism is effectively disabled. Network interface failure and node failure will be detected by the Topology and Group Services sub system 308.

WEST**End of Result Set**☐ **Generate Collection** **Print**

L2: Entry 1 of 1

File: USPT

May 21, 2002

DOCUMENT-IDENTIFIER: US 6393485 B1

TITLE: Method and apparatus for managing clustered computer systems

Detailed Description Paragraph Right (27):

The DCRP algorithm is summarized below: (1) A CSQL server broadcast a open database request including the name of the database and a timestamp to the CSQL_Services group, (2). Each CSQL server that has a different timestamp must vote CONTINUE and broadcast its timestamp in the first phase to force a database replication, (3) The CSQL server that receives its own broadcast must vote APPROVE in the first phase, (4) A CSQL server that has identical timestamp as the received one must vote APPROVE, (5) for each subsequent phase, a CSQL server that has a later timestamp than the received one must broadcast its timestamp and vote CONTINUE, (6) a CSQL server that receives its own timestamp must vote CONTINUE, (7) a CSQL server that has the same or any earlier timestamp must vote APPROVE, (8). If no message was sent in a phase, the server that broadcast its timestamp the last must replicate its version of the database to other servers. A server always makes a backup copy of its replica before replacing it.

WEST**End of Result Set**☐ **Generate Collection** **Print**

L3: Entry 1 of 1

File: USPT

May 21, 2002

DOCUMENT-IDENTIFIER: US 6393485 B1

TITLE: Method and apparatus for managing clustered computer systems

Detailed Description Paragraph Right (24):

CSQL Services is initially started in stand-alone mode. Topology Services and Group Services retrieves their configuration information from CSQL databases. After Group Services comes up, CSQL Services forms the CSQL_Services group 315 and runs a Database Conflict Resolution Protocol (DCRP) to synchronize the contents of the cluster configuration database. The first CSQL server forms the group, set the CSQL_Services group in a BIDDING state, and starts a timer to wait for other CSQL servers to join the group. A CSQL server that joins the group which is in the BIDDING state also starts a timer to wait for others to join. The timer value is defined in the cluster configuration database and may be different from node to node. Inconsistent timer values can be caused by different versions of cluster configuration databases that are being used by different nodes initially. When the first timer expires, the CSQL server broadcasts the timestamp of its cluster configuration database to the group using a Group Services n-phase protocol. Other CSQL servers broadcast their timestamps if their timestamp is more recent than the received one. When multiple CSQL servers send out their timestamp, one will be selected arbitrarily by Group Services and broadcast to the group in the next phase. A CSQL server sends out its timestamp only if its timestamp is better than the received timestamp. A CSQL server should send out its timestamp even if its is older than the received one only in the first phase in order to signal other CSQL servers that it has a different version. Eventually the protocol will conclude. Either all CSQL servers have identical timestamp or they all agree on the most up-to-date version. If not all timestamps are identical, the CSQL server that sends out its timestamp the last should broadcast its database to all others. CSQL servers should make a backup copy for database that are to be replaced by the latest version. After CSQL servers synchronize the cluster configuration database, they will set the state of the CSQL_Services group to its RUNNING state. Those CSQL Servers whose replica got replace by a new version will initiate a restart of Cluster Services. A CSQL server that joins a RUNNING CSQL_Services group must save its replica and replace it by the cluster version regardless of its timestamp value. If the new version has a different timestamp than its existing one which is presently being used by other sub systems, the CSQL Server will initiate a restart of Cluster Services.

Detailed Description Paragraph Right (27):

The DCRP algorithm is summarized below: (1) A CSQL server broadcast a open database request including the name of the database and a timestamp to the CSQL_Services group, (2). Each CSQL server that has a different timestamp must vote CONTINUE and broadcast its timestamp in the first phase to force a database replication, (3) The CSQL server that receives its own broadcast must vote APPROVE in the first phase, (4) A CSQL server that has identical timestamp as the received one must vote APPROVE, (5) for each subsequent phase, a CSQL server that has a later timestamp than the received one must broadcast its timestamp and vote CONTINUE, (6) a CSQL server that receives its own timestamp must vote CONTINUE, (7) a CSQL server that has the same or any earlier timestamp must vote APPROVE, (8). If no message was sent in a phase, the server that broadcast its timestamp the last must replicate its version of the database to other servers. A server always makes a backup copy of its replica before replacing it.